

REMARKS

Claims 4-8 and 11-13 are pending in this application. By this Amendment, claims 11 and 13 are amended. Support for the amendments may be found in the specification at, for example, paragraph [0036]. No new matter is added.

In view of the foregoing amendment and following Remarks, reconsideration and allowance are respectfully requested.

I. Rejections under 35 U.S.C. §103(a)

A. Thackeray, Ogita, Kawashima, and Kawabe

The Office Action rejects claims 4, 5, 7, 8, and 11-13 under 35 U.S.C. §103(a) as having been obvious over U.S. Patent No. 5,851,730 to Thackeray et al. ("Thackeray") in view of any of U.S. Patent No. 6,348,553 to Ogita et al. ("Ogita"), U.S. Patent No. 5,576,405 to Kawashima et al. ("Kawashima"), and U.S. Patent No. 5,707,776 to Kawabe et al. ("Kawabe"). Applicants respectfully traverse the rejection.

Independent claim 11 is amended to even more clearly distinguish over the applied references. The applied references fail to teach, suggest or establish any reason or rationale to provide a "process for manufacturing a semiconductor device, coating an anti-reflective coating forming composition on a substrate... wherein the anti-reflective coating forming composition comprises a resin produced by a condensation reaction between compounds of formula (1) wherein... the resin produced from the condensation reaction between compounds of formula (1) has a weight average molecular weight average of 200 to 500,000, and... is contained in an amount of more than 50 mass% in a solid content of the antireflective coating forming composition," as required by claim 11.

The Office Action asserts that Thackeray discloses an anti-reflective layer comprising a resin binder and a crosslinking resin in an amount of about 5 to 50% of the total solids in the layer, and that this teaches the amount of claim 11. See Office Action, page 2. Thackeray

teaches "the crosslinker component of the antihalation compositions of the invention in general are used in an amount of between about 5 and 50 weight percent of total solids of the composition, more typically in amount of 30 weight percent of total solids of the composition." See column 4, lines 26-31. Amended claim 11 requires that "the resin produced from compounds of formula (1) is contained in an amount of more than 50 mass% in a solid content of the anti-reflective coating forming composition." Thus, Thackeray fails to teach this limitation.

Furthermore, the Office Action fails to address the limitation recited by claim 13. Specifically, claim 13 requires that "the resin produced from the condensation reaction between compounds of formula (1) is in an amount of 60 to 95 mass%...." This further limitation is not taught by and, thus, would not have been rendered obvious by the references.

The Office Action asserts that, because "all of Ogita, Kawashima, and Kawabe disclose resin compositions, and teach known crosslinking agents that are commercially available, and meet the instant claim limitations for the structure and MW... it would have been obvious to one of ordinary skill in the art to prepare the material of Thackeray." See Office Action, pages 2-3. However, Ogita, Kawashima, and Kawabe do *not* teach the instant claim limitations. Specifically, Ogita and Kawashima are completely silent regarding the amount of the crosslinker, and Kawabe specifically discloses the following:

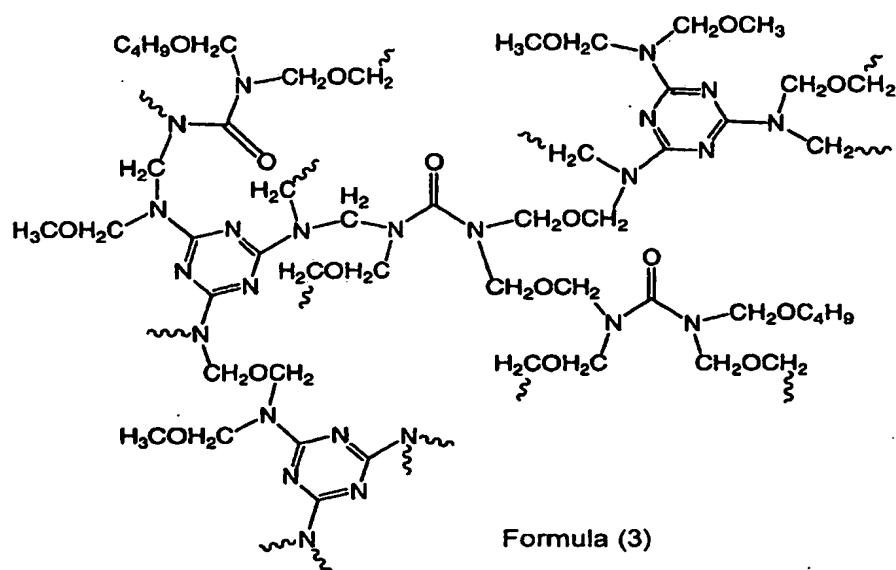
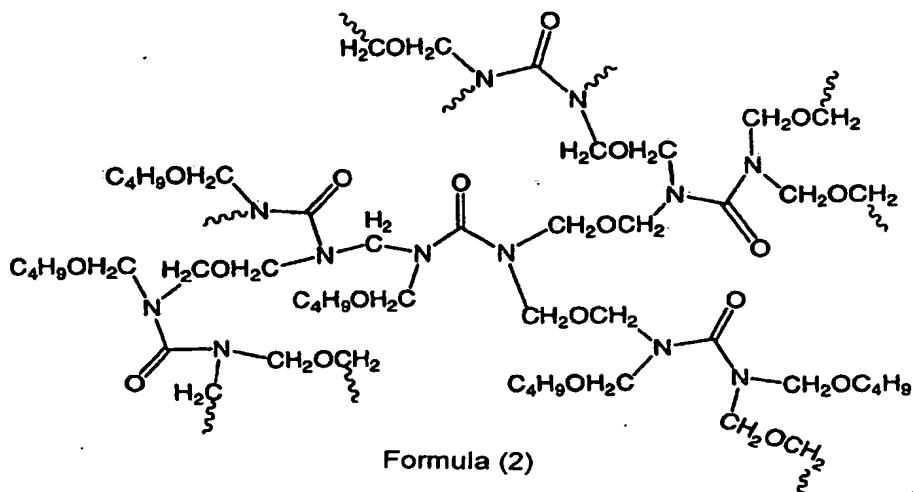
"The crosslinking agent may be added to the composition of the present invention in an amount of less than 10% by weight, preferably less than 5% by weight based on the weight of the photo acid generator. If the amount of the crosslinking agent is more than 10% by weight, the sensitivity of the composition is lowered and the resist of the composition give scum after development. Therefore, such is unfavorable."

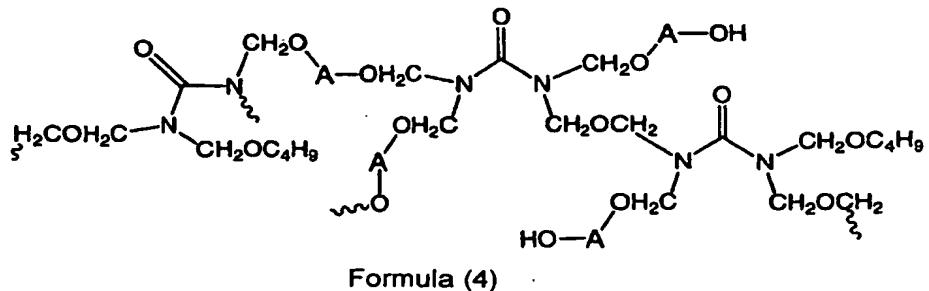
See column 44, line 66- column 45, line 5.

Furthermore, the crosslinking agents taught by Ogita, Kawashima, and Kawabe are merely for crosslinking between resins and not intended to bond the crosslinking agents themselves to each other. To the contrary, the process of claim 1 requires "coating an anti-

reflective coating forming composition on a substrate and baking it to form an anti-reflective coating...wherein the anti-reflective coating forming composition comprises a resin produced by a condensation reaction between compounds of formula (1)...."

The specific resin structures produced as a result of the condensation between the compounds of formula (1) are exemplified by formulas (2)-(4) below. See specification, paragraphs [0033]-[0035]. Specifically, the following resins are examples of the resin of claim 11.





As is evidenced by the specific structures illustrated above, the applied references do not teach the recited resin produced by a condensation reaction between compounds of formula (1).

For at least these reasons, independent claim 11 would not have been obvious over the applied references. Claims 4, 5, 7, 8, 12, and 13 depend from claim 11, and therefore would not have been obvious for at least the same reasons.

Reconsideration and withdrawal of the rejection are respectfully requested.

B. Thackeray, Ogita, Kawashima, Kawabe, and Kang

The Office Action rejects claim 6 under 35 U.S.C. §103(a) as having been obvious over Thackeray in view of any of Ogita, Kawashima, and Kawabe, in further view of U.S. Patent No. 6,468,718 to Kang et al. ("Kang"). Applicants respectfully traverse the rejection.

Thackeray, Ogita, Kawashima, and Kawabe have been discussed above. Regardless of its teachings, Kang fails to cure deficiencies with respect to claim 11. Reconsideration and withdrawal of the rejection are respectfully requested.

Thus, reconsideration and withdrawal of the rejection are respectfully requested.

II. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



James A. Oliff
Registration No. 27,075

Jana Meier
Registration No. 66,070

JAO:JZM/eks

Attachment:

Petition for Extension of Time

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OLIFF & BERRIDGE, PLC
P.O. Box 320850
Alexandria, Virginia 22320-4850
Telephone: (703) 836-6400

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